REMARKS

This is in response to the Office Action mailed on June 27, 2006. Claims 1-30 and 32-40 were pending in that action. Applicant assumes that the listing of 1-30 and <u>33</u>-40 in the Office Action Summary was an error (claim 32 is included in the substantive sections). All pending claims were rejected. With the present response, claims 1, 10, 27 and 32-40 are amended. The remaining claims are unchanged.

It is respectfully pointed out that the Office Action of June 27, 2006 made no indication one way or the other as to whether Applicant's drawings have been accepted. Applicant respectfully requests confirmation that the drawings in this case have been accepted. Further, Applicant has reviewed the file in this case and sees no indication that the Examiner has considered the Information Disclosure Statement submitted on June 6, 2006. Applicant respectfully requests confirmation that the references submitted therein have been considered.

On page 2 of the Office Action, the Examiner pointed out that Applicant made an error in claim numbering when the present application was filed. With the present response, claims 32-40 have been amended accordingly. Specifically, the number of each of these claims has been reduced by 1. Thus, assuming entry of the claim numbering amendments, the pending claims will become claims 1-39. Applicant apologizes for the inconvenience and, during subsequent communications, will attempt to distinguish between the new claim numbering and the old.

Beginning on page 2 of the Office Action, the Examiner rejected claims 1-38 (claims 1-37 following entry of the present amendment) under 35 U.S.C. §101. With the present amendment, Applicant has amended claims 1-37 to clearly place them within the realm of statutory subject matter. Claims 1-9 now recite a standardized data representation "that is encoded on a computer-readable medium." Claims 1-26 now recite a tagged format data schema "that is encoded on a computer-readable medium." Claims 27-37 now recite an XML data schema "that is encoded on a computer-readable medium." The Manual of Patenting Examining Procedure makes it clear that a claimed computer-readable medium encoded with a data structure

defines statutory subject matter. See M.P.E.P. §2106(IV)(B)(1)(a). The latest version of guidelines for the examination of computer-related inventions supports this position. Accordingly, it is respectfully submitted that claims 1-37 are now in clear compliance with 35 U.S.C. §101.

Beginning on page 4 of the Office Action, the Examiner rejected claims 1-8 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application No. 2004/0215626 (hereinafter referred to as "the Colossi reference"). For reasons that will be discussed in detail below, it is respectfully submitted that claims 1-8 are patentably distinguishable from the cited reference.

Independent claim 1 recites a standardized data representation of an object-relational data model. In response, the Examiner points to the Colossi reference at paragraphs 78 and 80. A close examination of the cited paragraphs, and indeed the entire Colossi reference, reveals the described multidimensional metadata object model is representative of data stored within a relational database. There is absolutely no teaching or suggestion in the Colossi reference that the described multidimensional metadata object model is constructed so as to be representative of an object-relational data model.

Further, independent claim 1 also defines the claimed standardized data representation as being configured "to support an automatic derivation of a dimensional data model." In response to this element, the Examiner again points to the Colossi reference at paragraphs 78 and 80. These paragraphs describe construction of a multidimensional metadata object model designed to describe schemas used in relational databases to represent multidimensional data. As is made very clear in paragraph 0080, the described multidimensional metadata is utilized to help a data warehouse designer represent the structural relationship among tables and their columns (See also paragraph 0074 describing a metadata programming interface). The metadata provides a basis for performing multidimensional queries. However, there is absolutely no teaching or suggestion of an automatic derivation of a dimensional model based on the described metadata. In effect, the metadata is the goal and is not a means of

obtaining the goal. For all of these reasons, it is respectfully submitted that independent claim 1 is patentably distinguishable from the cited Colossi reference.

Dependent claims 2-8 are dependent upon independent claim 1 and were similarly rejected. It is respectfully submitted that claims 2-8 are patentably distinguishable from the cited Colossi reference at least for the same reasons described above in relation to independent claim 1. This is not to say that dependent claims 2-8 do not themselves recite claim elements that are independently distinguishable from the cited reference.

For example, claim 2 defines a standardized data representation that enables an object-relational data model to be specified. In response to this claim element, the Examiner points to the Colossi reference at paragraphs 81 and 82. A close examination of these passages, and indeed the entire Colossi reference, reveals a description of metadata objects that provide information about an underlying relational database schema. There is also some description of the metadata objects being organized in a metadata object model that is consistent with a cube model representation. However, the metadata representation is still directly related to the underlying relational database. There is absolutely no teaching or suggestion of a standardized data representation being tied to an object-relational data model. This is an additional reason why claim 2 is believed to be in allowable form.

Dependent claim 3 further defines the claimed standardized data representation as being configured to be processed by a processing engine that is adapted to autonomously derive a dimensional model. In response, the Examiner points to the Colossi reference at paragraphs 81-83. A close examination of these passages, and indeed the entire Colossi reference, reveals that there is absolutely no teaching or suggestion of any autonomous derivation of a dimensional model. The reference describes a system for constructing a multidimensional metadata object model that is indicative of an underlying relational database schema. This in no way teaches or suggests automatic derivation of a dimensional model based on an object-relational data model. For at least this additional reason, it is respectfully submitted that claim 3 is in allowable form.

Dependent claim 4 further defines the claimed standardized data representation as including a description of objects and object relationships. In response to this limitation, the Examiner points to paragraph 0084 of the Colossi reference. This cited paragraph corresponds to FIG. 3 of the cited reference. The diagram shown in FIG. 3 is "a sample star-joined schema." As is described in paragraph 0084, attributes are created for dimensions and a fact table based on columns in a relational data table. There is no indication that the star-joined schema is indicative of object relationships reflected in an object-relational data model. On the contrary, all connections are made to a relational database model. For at least this additional reason, it is respectfully submitted that dependent claim 4 is patentably distinguishable from the reference cited against it.

Claim 5 adds the element of a description of persistent data store mappings associated with an object-relational data model. Claim 6 adds a description of at least one focal point that represents a point of analysis indicated in association with data in an object-relational data model. Claim 7 adds a description of objects and object relationships. Claim 8 even more narrowly defines claim 7. It is respectfully submitted that a close examination of the passages cited against claims 5-8 reveals that there is no indication of the recited dependent claim elements. The Colossi reference fails to teach or suggest any standardized representation of an object-relational data model as claimed. It is respectfully submitted that dependent claims 5-8 are also independently distinguishable from the cited Colossi reference.

On page 6 of the Office Action, the Examiner rejects 39 and 40 (now claims 38 and 39) under 35 U.S.C. §102(e) as being anticipated by the Colossi reference. Notably, the passages cited in the rejection seem to come from a reference referred to as "Weissman." Applicant will assume that this rejection is intended to stem from U.S. Patent No. 6,212,524 (hereinafter referred to as "the Weissman reference") and not the Colossi reference. If this assumption is in error, Applicant will trust the Examiner to correct the misunderstanding. For reasons that will be discussed in detail below, it is respectfully submitted that claims 38 and 39 are patentably distinguishable from the Weissman reference.

Independent claim 38 recites "a driver for receiving source data and pre-processing it into a format consistent with a model definition schema." In response, the Examiner points to the Weissman reference at column 3, lines 25-30. This passage simply describes extracting data from a source system and loading it into staging tables to be utilized in the population of a datamart. As is described, semantic templates are used to convert the extracted data into a format appropriate for the tables. Thus, what is described is a pre-processing for converting data extracted from source systems into a format consistent with a set of staging tables. It is respectfully submitted that this is nothing like pre-processing data into a format consistent with a model definition schema. There is nothing in the Weissman reference that indicates that the staging tables are bound by restrictions related to a model definition schema.

Further, independent claim 38 recites "a processing engine for receiving pre-processed data and generating a corresponding dimensional data model." In response, the Examiner points to the Weissman reference at column 36, lines 20-30 and column 35, lines 40-65. Notably, these cited passages have little or nothing to do with the staging tables identified by the Examiner as being equivalent to the claimed imposition of a model definition schema. In other words, the rejection of the second claim element is inconsistent with the Examiner's rejection of the first claim element. For at least these reasons, it is respectfully submitted that independent claim 38 is in allowable form.

Dependent claim 39, which was also rejected in view of the Weissman reference, is believed to be in allowable form at least for the same reasons described in relation to its affiliated independent claim 38. However, it is respectfully submitted that claim 39 is also allowable based on the merits of its own limitations. Dependent claim 39 further defines the claimed processing engine as being configured to produce a customized dimensional data model that corresponds to a received collection of data formatted to be consistent with the model definition schema. The Examiner again points to columns 35 and 36 of the cited Weissman reference. Applicant has reviewed these passages in detail and is confused as to how they could be interpreted as being equivalent to the claimed processing engine. There appears to be no

teaching or suggestion in the cited passages of any processing engine configured to perform a translation as defined in claim 39. For at least these additional reasons, it is respectfully submitted that claim 39 is in allowable form.

Beginning on page 6 of the Office Action, the Examiner rejects claim 9 under 35 U.S.C. §103(a) as being unpatentable over the Colossi reference in view of U.S. Patent Application No. 2005/0246370 (hereinafter referred to as "the Rubendall reference"). Claim 9 is dependent upon independent claim 1 and is believed to be in allowable form at least for the same reasons discussed above in relation to that independent claim. In other words, it is respectfully submitted that the Rubendall reference does not remedy the inability of the Colossi reference to teach or suggest the elements of independent claim 1. Further, for reasons that will be discussed in detail below, it is respectfully submitted that claim 9 is independently distinguishable from the two references cited against it considered independently or in combination.

As an aside, Applicant respectfully points out the Examiner's submission to the fact that none of the data elements defined in claim 9 are included in any standard representation taught or suggested by the Colossi reference. Several of the data elements included in the Markush group of claim 9 are what one skilled in the art might perceive as a basic component of an object-relational data model. Thus, Applicant would submit that the Examiner's indication of a lack of teaching or suggestion by the Colossi reference in relation to claim 9 is further indicative of the inability of independent claim 1 to teach or suggest a standardized data representation configured to support an automatic derivation of a dimensional data model that corresponds to an object-relational data model.

Turning back to claim 9, the Rubendall reference does seem to teach a description of a package of objects formatted in an XML document. However, it is unclear how such a representation would be incorporated into the teachings of the Colossi reference. Would the XML format be substituted for the multidimensional metadata object model described in the Colossi reference? If so, would this not defeat the entire purpose of the Colossi reference? The Colossi reference teaches a metadata object model designed to describe schemas used in a

relational database environment. The Colossi reference does not teach or suggest derivation of a dimensional data model that corresponds to an object-relational data model. Thus, there is a big piece missing from the Colossi reference. The fact that the Rubendall reference describes utilization of XML to describe a package of objects does nothing to supply the missing piece. The proposed combination of references fails to teach or suggest the elements of claim 9. For at least this additional reason, it is respectfully submitted that dependent claim 9 is in allowable form.

Beginning on page 8 of the Office Action, the Examiner rejects claims 10-15, 18-30, 32-33 and 36-38 (claims 32-33 are now 31 and 32, and claims 36-38 are now claims 35-37) under 35 U.S.C. §103(a) as being unpatentable over the Rubendall reference in view of the Colossi reference. For reasons that will be described in detail below, it is respectfully submitted that these claims are patentably distinguishable from the cited references considered individually or in combination.

Independent claim 10 recites "a tagged format data schema... that represents an object-relational data model." As claimed, the tagged format data schema is configured "to support an automatic derivation of a dimensional data model that corresponds to [an] object-relational data model." In rejecting claim 10, the Examiner points to the Colossi reference as teaching or suggesting the claimed automatic derivation of a dimensional data model. Specifically, the Examiner points to paragraph 0082 of the Colossi reference. A close examination of this passage, and indeed the entire Colossi reference, reveals that there simply is no teaching or suggestion of an automatic derivation of a dimensional data model. The Examiner relies on a statement in the Colossi reference that dimension metadata objects are connected to a facts metadata object just as dimension tables are connected to a fact table in a star schema. This comment in paragraph 0082 of the Colossi reference is a comparison of the multidimensional metadata object model of the Colossi reference with a typical dimensional model. There is nothing that implies any automatic derivation of a dimensional data model based on the metadata

object model. This element of claim 10 is simply missing from the cited combination of references. Claim 10 is believed to be in allowable form at least for this reason.

Dependent claims 11-15, which are dependent upon independent claim 10, are believed to be in allowable form at least for the same reasons provided in support of the allowability of claim 10. However, it is respectfully submitted that each of claims 11-15 also recite elements that are neither taught nor suggested by the Rubendall and Colossi references considered independently or in combination. Dependent claims 11-15 generally further define the claimed tagged format data schema as including a tag for indicating a particular component of an object-relational data model. Notably the Colossi reference fails to teach or suggest any tagged format data scheme related to an object-relational data model. Thus, it is insufficient to simply point to the Rubendall reference as teaching an XML description of a package of objects. Even assuming that the Rubendall reference does describe an object model using XML, this does not remedy the failure of the Colossi reference to teach or suggest the other remaining claim elements. For at least these additional reasons, it is respectfully submitted that dependent claims 11-15 are in allowable form.

Dependent claims 18-26, which are also dependent upon independent claim 10, and which were also rejected based on the same references, are believed to be in allowable form at least for the same reasons discussed above in relation to their affiliated independent claim. Further, it is respectfully submitted that some or all of these dependent claims also recite features that are independently distinguishable from the cited combination of references.

Independent claim 27 recites an XML data schema that represents an object-relational data model. As claimed, the XML data schema is configured to support an automatic derivation of a dimensional data model that corresponds to the object-relational data model. As has been argued relative to other pending independent claims, it is respectfully submitted that the cited Colossi reference simply fails to teach or suggest any data schema configured to support an automatic derivation of a dimensional data model that corresponds to an object-relational data model. The Rubendall reference does not remedy this inability of the Colossi reference to teach

or suggest the elements of the independent claim. Thus, for at least this reason, it is respectfully submitted that independent claim 27 is in allowable form.

Dependent claims 28-33 are dependent upon independent claim 27 were rejected based on the same references as their independent claim. It is respectfully submitted that these dependent claims are in allowable form at least for the same reasons discussed above in relation to their affiliated independent claim. Further, it is respectfully submitted that some if not all of the dependent claims also recite features that independently distinguishable from the cited combination of references.

On page 13 of the Office Action, claims 16, 17, 34 and 35 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Rubendall reference in view of the Colossi reference and further in view of U.S. Patent No. 6,907,433 (hereinafter referred to as "the Wang reference"). It is respectfully submitted that these dependent claims are in allowable form at least for the same reasons discussed in relation to their affiliated independent claims. In other words, the Wang reference does not remedy the inability of the Rubendall and Colossi references to teach or suggest the elements of the independent claims. For at least this reason, it is respectfully submitted that these dependent claims are also in allowable form.

Beginning on page 14 of the Office Action, the Examiner again rejected claims 39 and 40 (now claims 38 and 39). This rejection is cited as being in view of Applicant's admission of prior art in view of U.S. Patent Application No. 2005/0038780 (hereinafter referred to as "the Souza reference"). The Examiner seems to indicate that Applicant has admitted that the first element of independent claim 38 has been admitted as prior art. Applicant has no idea where this claimed admission is coming from. The Examiner cites "paragraph 0005" but provides no explanation as to where this paragraph is located. It is respectfully submitted that this rejection of claims 38 and 39 is inadequately supported and, for at least this reason, should be withdrawn. Further, the Examiner cites the Souza reference as teaching or suggesting a processing engine for generating a corresponding dimensional data model. In support, the Examiner points to the Souza reference at paragraph 0016. The Souza reference describes a method for optimization using
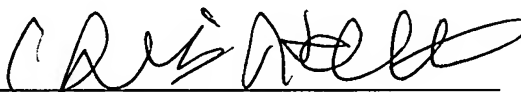
multidimensional data. A problem instance is specified in a multidimensional format. The problem instance is transformed using a transformation module. An optimization engine then solves the problem instance. Notably, this process described in the Souza reference pertains to solving a problem instance and has nothing to do with generating a dimensional data model as claimed. For at least this reason, it is respectfully submitted that claims 38 and 39 are patentably distinguishable from the references cited considered in combination or independently.

For all of these reasons, it is respectfully submitted that claims 1-39 are in allowable form. Reconsideration and favorable action are respectfully solicited. The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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